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Committed Women: Explaining Rising U.S. Female Imprisonment 1990-2010

Ellen L. Tyler
Macalester College, ellentyler2@gmail.com

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Ellen Tyler

Economics Honors Thesis

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Advisor: Samantha Snyder Çakır, Macalester Economics Department
Readers: Gary Krueger and Sarah West

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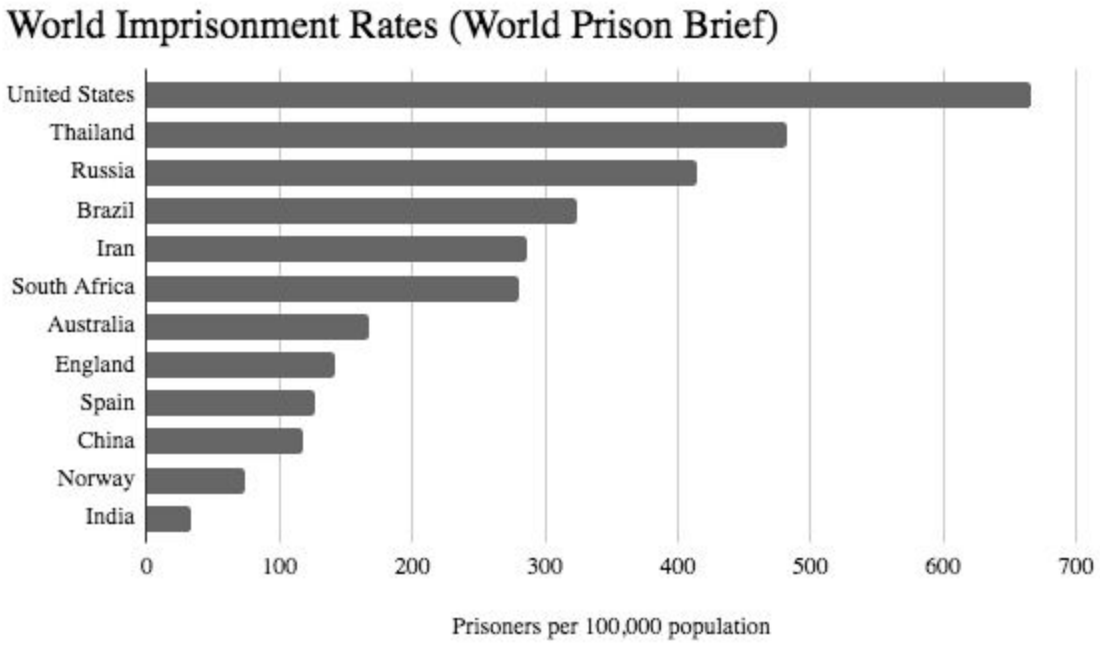
Abstract

Female prison admissions grew 62% between 1990 and 2010, while arrests for females over the same period only increased by 14%. As a larger portion of arrested women have been sent to prison over time, it seems that increased prison admissions over time are not due only to more women committing crimes, but also to more severe punishment for arrested females. Using data on arrests, prison admissions, and county characteristics, I examine factors in the increased arrest rate and imprisonment rate for females and males according to offense type over 1990 to 2010 using panel regressions with county and state-time fixed-effects. The results indicate that female arrests for violent and property crimes increase in counties with a higher percentage of female-headed households with no husband present, and that prison admissions for females are lower in counties with higher median incomes. The presence of a treatment facility in the area does not appear to significantly affect changes in imprisonment when controlling for arrests.

Introduction

The U.S. imprisons a higher percentage of its population than any other country in the world (World Prison Brief). An estimated $80 billion was spent on U.S. state and federal corrections in 2010, while a 2016 study argues that the true cost of incarceration exceeds $500 billion annually when considering social costs (The National Association of State Budget Officers, 2013, Brown et. al, 2016).

Figure 1.



This enormous cost is due in large part to the rapid growth in the U.S. prison population. While women prisoners made up only a small portion of the prison population, the rate of growth for female prison admissions was more than triple that of men between 1990-2010, as shown in Table 1. Conditions for women in prison have been particularly difficult since many facilities were not equipped to house female inmates and those that were quickly became overcrowded.

Table 1. National Prisoner Statistics adjusted by population

	1990	2010	Growth
Female prison admissions per 100,000 female pop.	24.6	39.9	62%
Male prison admissions per 100,000 male pop.	298.3	351.1	18%

Social movements for prison reform have rallied around the argument that incarceration is not effective at its "correctional" purpose, as evidenced by a high recidivism rate measured as over two-thirds of offenders being rearrested within three years of release from prison (Cooper et. al, 2014). Women's recidivism often comes as a result of inability to follow strict parole and probation programs which were initially designed around men while balancing responsibilities such as search for employment, addiction treatment, finding stable housing, and reuniting with family. This creates a "revolving door" in and out of the criminal justice system which becomes harder to escape as responsibilities and stresses build.

The massive growth rate in female prison admissions prompts the question of whether women are, in fact, committing more crimes or more serious crimes. Perhaps increasing hardships for women have led them to choose crime as an alternative or supplement to legal work. But there is also a possibility that women did not increase their crime—rather, they got punished more severely for the same crimes over time. The data suggest that arrests did not increase by as much as prison admissions, which means that other factors in the decisions to imprison after arrest may explain the rise in imprisonment over arrests.

Section I situates this research in the surrounding literature by comparing approaches for modeling rises in imprisonment and exploring factors that uniquely affect females in the path to imprisonment. Section II grounds the criminal justice process in economic theory starting with Becker's model of crime and progressing through sentencing decision-making. Section III discusses the data used to measure arrests, imprisonment, and the determinants of each. Section IV lays out the empirical models used to measure the impact of each step in the criminal justice process. Section V presents the results from my analysis.

I. Literature

Previous research examines the rise in U.S. imprisonment for several demographic groups, but does not use a county-level approach or separate estimations by type of offense. Harmon and O'Brien (2011) examine the differences in arrests and imprisonment by gender, concluding that sentencing reforms toward determinant policies (limiting discretion of judges and parole boards) are not related to changes in the ratio of female to male incarceration rates over 1970-2008. Their approach examines policy changes such as Truth in Sentencing and Three Strikes by state, and does not separate imprisonment by offense types.

Similarly, Boppre and Harmon (2015) study the disparity between white and Black female imprisonment using a state-level approach to measure the effects of changes in admissions for different crime types of the overall imprisonment ratio of white to Black females. Controlling for county characteristics but not for arrests, they find that drug crimes and property crimes drove the increases in Black female imprisonment over white females.

By analyzing changes at the county-level, controlling for arrests, and splitting the estimations across offense types, my research contributes more detailed results to the existing literature and examines the significance of single-motherhood on both arrests and prison admissions, which, to my knowledge, has not been included in empirical studies of this vein. I use the framework provided by previous studies combined with the insights on gender differences provided by female crime and labor literature to ground my research. Beginning with crime, I follow the progression through each stage of the

criminal justice process to imprisonment and the literature that informs my approach in each of those steps.

A. Crime

Crime is generally modeled in economics by rational choice theory, beginning with Becker (1968) and his "supply of offense" which posits that an individual chooses to commit a crime if the expected utility to them exceeds the utility they could get by using their time and other resources at other activities. This model highlights the tradeoff between engaging in legal and illegal work and the time and budget constraint which individuals face. It was extended by Ehrlich (1973) into a specific time-allocation between illegal and legal income-generating activity, which allows for individuals to mix their time between these activities rather than only commit crimes or not.

For women, the added time-allocation of non-market work spent supporting a family could affect their choice. Erosa, et. al (2017) find that a ten hour difference between men and women (in which women devote ten hours per week to home production) increases the gender wage gap and decreases the amount of women in high-hours occupations. This means that when women have to spend more time on home production, they also face lower wages and limits to which jobs they can participate in. This would especially be true for single mothers who have full responsibility for their family, and 42% of mothers in prisons who had children under 18 in 2004 were single mothers (Bureau of Justice, 2008). With fewer options and lower wages, women may need to resort to criminal activity as an alternative or supplement to income.

While increased non-market work by women may decrease their wages and available time, increased market work by women may result in crime as well. Witt and Witte (2000) find that higher levels of imprisonment and increases in labor force participation of women are related to significantly high crime rates. The authors claim that the explanation for this relationship is likely due to lower watchfulness of neighborhoods and crime-prone children if women are working rather than at home monitoring their surroundings and supervising their teenage children who may otherwise commit crimes. This complicates the outcome of female utility-maximization in crime decisions, because while their decision to commit crime would increase the crime rate, so also may their decision to perform legal work, although this should increase the crime rate overall rather than just the female crime rate.

Expanding off of this difference between male and female crime outcomes, there is also cause for investigation of the differences between white and Black women. In their examination of labor market outcomes between white and Black women, Collins and Moody (2017) find that the racial wage gap for full-time women workers was much lower in 1980 than in 2010. They attribute this largely to the fact that white women were more likely to obtain high-paying jobs such as physician, dentist, or lawyer, while Black women were more likely to hold lower-paying service jobs. This increase in the racial wage gap would indicate that growth rates in crime for Black women would be larger than growth rates in crime for white women, other factors held constant.

Higher female crime rates may also be explained by the phenomenon of intergenerational transmission of crime participation from mother to daughter, as

modeled by Boustan and Collins (2014) in their labor context. They note that daughters with working mothers "develop skills, gather information, or build networks that are conducive to their subsequent work activity." It is not hard to imagine that being true for crime, as well. This would mean that women who commit crimes pass their decisions and abilities to their daughters, resulting in amplified crime in the next generation. While this may not have changed over time, if the amount of female criminals increases due to another cause, the intergenerational transmission of crime would augment that change.

Crimes are not easily identifiable by gender due to the fact that a crime is often reported without knowledge of who the offender was. However, Ackerman et. al (2006) use the National Crime Victimization Survey, which reports crime from victims who report on the gender of the offender, to conclude that the increasing arrest rate for women over men was not due to an increase in crimes by women over men.

B. Arrest

Arrests may increase because there are more crimes, and therefore more criminals to be arrested, or because of changes in police behavior or resources. If arrests increase by a greater percentage than crimes, either the crimes being committed are more pursued by police or the criminals are more identifiable.

Certain crimes are more identifiable than others, such as assault in comparison to motor vehicle theft. The nature of a crime and the existing resources available to pursue it vary. Police may also face more difficulty in pursuing crimes that are typically

community-reported, as the rise of a "no-snitch" culture has meant that fewer witnesses are willing to report and testify on criminal activity (Kaste, 2015).

Arrests by police also depends on the intensity and skill with which a crime is pursued. Crimes that are viewed as more of a danger to society can be prioritized by police forces, shifting the arrests to be concentrated around certain offenses. When Nixon declared the "War on Drugs" in 1971, the use of drugs was more heavily criminalized, resulting in higher arrest and imprisonment rates for drug-related offenses (Global Commission on Drug Policy, 2011). With this reorganization of priorities, police pursued drug offenses with more intensity.

Similarly, Blumstein and Beck (1999) show that murder is the offense which has the highest likelihood of arrest due to the amount of police resources allocated to solving those cases. Expanding to the gender context, if police pursue crimes which are more frequently committed by females, or if women become more identifiable criminals, the changes in policing may disproportionately increase female arrests.

C. Imprisonment

After an individual is arrested, they then may be prosecuted and convicted by a judge or jury. Harsher punishments given by these authorities can increase imprisonment without any change in crime or arrests. Decisions may evolve as a result of changing policy, political or social influence, or alternative options to imprisonment.

These decisions differ by race as well as gender, as The Sentencing Project (2015) cites a 56% increase in white female imprisonment over 2000-2014 paired with a 47%

decrease in imprisonment for African American females. Harmon and Boppre (2011) examine the differences between white and black female imprisonment and find that drug crimes in particular have driven the gender gap and the racial disparity in female incarceration.

Neal and Rick (2014) conclude that the growth in US prison populations since 1980 was driven by changes in policy that caused arrested individuals to face harsher punishments. They delineate the changes in policy starting in the late 1970's, when justice policy in the US moved toward determinate sentencing due to critics across political parties that condemned judges' personal biases in determining sentence outcomes. Applying this knowledge to arrested females, it is possible that the change to determinate sentences caused judges to give harsher punishments to women who they may have previously let off easier knowing they were mothers or having a bias toward softer punishments for women.

Following this change, in 1994, the federal government passed the Violent Crime Control and Law Enforcement Act which began the Truth-in-Sentencing (TIS) Incentive Grants Program. The TIS program gave grants for prison construction and expansion to states that assumed policies requiring sentenced offenders to serve large portions of their sentences. This caused an increase in sentence length, which in turn caused prison populations to rise (Neal and Rick 2014). California, for example, began a "Three Strikes and You're Out" policy that requires enhanced penalties for repeat offenders in 1994.

Imprisonment began to level off and even fall in the later 2000's, which may relate to changes in the sentencing process in 2004 as Blakely v. Washington determined

that any factors judges rely on to determine sentencing must be "proven beyond a reasonable doubt to a jury." This caused sentences to become shorter as recommended extensions were no longer valid (Neal and Rick 2014). If this shift embodies a step back toward less determinate sentencing, women may once again be benefitting from a bias toward softer punishments to women from jury members, resulting in less women being sent to prison, or sent for shorter sentences.

While changing policy influences imprisonment decisions, the proportion of arrests sent to prison may also reflect the availability of alternative institutions for offenders. Harcourt (2005) examines mental hospitalization rates with imprisonment rates over 1928-2000 and finds evidence that higher imprisonment may be explained by lower mental hospital populations, suggesting that institutionalization may not be increasing as much as shifting patients out of mental facilities and into prisons.

A survey by the Bureau of Justice Statistics in 2012 found that 66 percent of women in prison reported having a history of a mental disorder, which was nearly double the percentage of men (35%) (Berzofsky and Bronson, 2017). This prompts the question of whether prisons may be increasingly admitting offenders who would be better served at a mental facility, which has disproportionately affected females.

Another possible explanation for the increased rate of imprisonment given arrest is that the offenses for which the arrests were made became more serious. Beck and Blumstein (1999) explain that "the ratio of commitments to arrests varies directly with the seriousness of the crime" (pg. 34). If women increased their participation in crimes

deemed more prone to result in imprisonment, or the crime they were involved in became viewed as more serious, the rate of commitment to prison for women may have increased.

Finally, court-specific factors may influence decisions, as shown by Johnson (2006) in which the author examines judge- and county-level factors to conclude that small courts tend to sentence more severely than large courts, male judges are more lenient in commiting female offenders to prison, and courts that receive high violent crime caseloads are more lenient in sentencing violent crime cases. This means that female prison admissions may increase over males if they are more often tried in smallers courts, by female judges, or for violent crimes over time.

II. Theory

A. Crime

I follow Witte (1980) to model crime through a utility-maximization framework. Witte's theory expands Becker's model and separates crimes that are income-generating activities from criminal consumption activities. Time-allocation of income-generating activities (illegal vs. legal) is useful for thinking about crimes that produce wealth such as theft and selling drugs. Time-allocation of consumption activities (illegal vs. legal) is more appropriate for crime that does not generate income such as violent crime or drug consumption. Using this framework, individuals allocate their time in a multi-period model between legal income-generating activities (t_ℓ), illegal income-generating activities (t_i), legal consumption activities ($t_{c\ell}$), and illegal consumption activities (t_{ci}). Their utility is determined by these time allocations and their level of wealth (w):

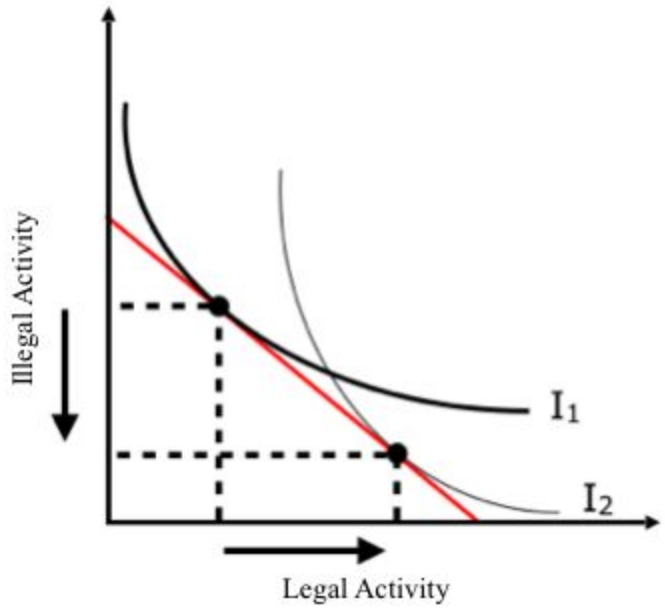
$$U=U(t_\ell, t_i, t_{c\ell}, t_{ci}, w)$$

where U_w, $U_{tc\ell}$, and U_{tci} are positive and $U_{t\ell}$ and U_{ti} are negative, indicating that time spent completing the income-generating activities depletes utility, while time spent completing consumption activities increases utility. Initial wealth can be used toward consumption activities and can be built through income-generating activities each period, which increases utility.

In both cases—income-generating and consumption—individuals face decisions between legal and illegal activity. The indifference curve reflects the feelings an individual has toward illegal and legal activity. Assuming an individual is risk-averse, their perception of riskiness of illegal activity causes their indifference curve to bend

toward legal activity (demonstrated in Figure 3). The less risky they perceive the activity, the flatter their indifference curve would become, making the two activities more substitutable. If women are more risk-averse than men, it would lower their level of engagement in criminal activity, all else constant. The risks faced by women also may be different than those faced by men. While they may have more to lose (single-mothers in particular), they also may be less detectable by police, lowering the risk of being caught.

Figure 3. Crime Perceived as More Risky



This idea has been exploited by drug lords, particularly in South America, who use women as drug mules to transport substances discreetly in hopes that women would be less suspect than men (COHA, 2011). It is an interesting possibility that women inaccurately assessed the risk of being caught banking on their gender as cover, and that police were not deterred by the gender "cover," causing more women to be arrested due to more women committing crimes relative to men.

If a consumption activity is perceived as less risky, individuals may find the activities to be more substitutable. As addiction to a substance proceeds, individuals may value the consumption of these illegal activities higher, as higher utility is generated from each unit of time spent consuming the illegal activity, which causes their indifference curve to bend toward illegal consumption.

Figure 4. Time Constraint Shifts Inward when Illegal Payoff does not Depend on Hours

The constraint represents time and the returns (or costs in the case of consumption) of each activity. If women face extra constraints due to household-running duties, they have less time to spend on income-generating activities, shifting their constraint inward from men. If a criminal activity provides a higher wage that depends less on hours spent, she may choose to partake in that activity given the new time constraint in order to earn enough to support herself, and in many cases, a family as well (demonstrated in Figure 4). Another case to consider is if an individual does not have access to legal work (unemployment), they may need to turn to illegal activity to generate

income. When women have higher unemployment than men, they may be more likely to commit crime.

Additionally, education has been found to be negatively related to crime, suggesting that beyond the possibility of earning higher wages due to education, there may be some characteristic of educated people, or that education gives people, that makes them less likely to commit crime (Machin et. al, 2011). This may be due to ethical ideas gained from education or valued by those inclined to obtain high education, due to self-perception of educated people not associating with crime, or that educated people have more to lose by committing crime than those without education.

Applying this knowledge, increased single-motherhood, unemployment, and returns for illegal activity are expected to increase crime, while increased perceived riskiness of criminal activity, risk aversion, wages for legal activity and education levels are expected to decrease crime in the theoretical model.

B. Imprisonment

A decomposition method is typically used to to measure the impact of each stage in the criminal justice process on imprisonment (Neal and Rick, 2014, Beck and Blumstein, 1999). It is constructed from the idea that the population of imprisoned individuals is a certain portion of the total population. Of the total population, a portion of individuals chose to commit crime. Of those who commit crime, a portion are arrested. Of those arrested, a portion are convicted, and of those convicted, a portion are admitted

to prisons. So the fraction of the population that is in prison for each offense type (j) can be represented as follows:

$$i_{jt}=(c_j-i_{j(t-1)})*\alpha_j*\gamma_j*\delta_j \quad (1)$$

where the fraction of the population in prison today (i_t) is a function of the fraction of the population that are criminals that weren't in prison during the last period ($c-i_{t-1}$, where c represents the existing fraction of the population who are criminals), the probability of being arrested given that an individual has committed a crime (α), the probability of being convicted given arrest (γ), and the probability of admission to prison given conviction (δ). If any of these parameters increase, the fraction of the population in prison increases.

These parameters may increase due to a growth in concern about the negative externalities of crime. Drug crimes, for example, are widely accepted to pose negative externalities through increases in drug use resulting in increases of other crimes beyond drug crimes (BJS,1994). It is then reasonable that policymakers would choose to over-prosecute (or take other punitive measures) to ensure that these crimes do not continue and to discourage future criminal activity.

While this framework addresses the inputs to prison entry, it does not get at the question of stock and flow in prisons. Sentence length can be examined separately as an input to prison population growth, but in my analysis I consider only prison admissions.

III. Data

A. Prison Admissions

The National Archive for Criminal Justice Data (NACJD) maintains offender-level data on admissions and releases from state and federal prisons in the National Corrections Reporting Program (NCRP), which is administered by the Bureau of Justice Statistics (BJS). The data are submitted by state departments of correction annually since 1983, and are restricted in access without approval from the University of Michigan Inter-university Consortium for Political and Social Research (ICPSR). The data is adjusted by female/male population within each county, given by the US. Decennial Censuses for 1990, 2000, and 2010 using linear interpolation for 1991-1999 and 2001-2009.

I aggregate this data by year, gender, county where prison sentence was imposed, and offense type, which was generated using the FBI's classification of crimes against persons, crimes against property, and crimes against society from the National Incident-Based Reporting System (NIBRS, 2011). Crimes against persons include violent offenses such as murder, assault, rape, and robbery. Crimes against property include burglary, motor vehicle theft, fraud, and embezzlement. Crimes against society include driving under the influence, prostitution, and other public order offenses. I break out drug-related offenses from these categories to study this category separately, which includes the sale, possession, or use of illegal drugs. For a complete list of offenses contained within each category, see Table 7 in the Appendix.

There is significant missing data issues within the NCRP dataset. Neal and Rick (2014), perform an audit of the NCRP data to identify states that contain reliable reporting within the time frame 1985-2005, which includes examining discrepancies between recorded populations with recorded admissions and releases, infrequency in reporting, and comparing data to the National Prisoner Statistics (NPS) reporting. They ultimately find CA, CO, MI, NJ, SC, WA, and WI to be the only states fit to accurately represent their prison stocks and flows within the time period. I perform my analyses on these states as well in Tables 10 and 11 of the Appendix.

Their analysis, however, focuses on totals within states and offenders entering and leaving prisons, while this study looks at prison admissions and counties specifically. This does not negate the concern of inaccurate reporting, but means that my analysis may not be as reliant on entire state reporting, but rather consistent county reports. As the data is reported from states, I remove any states that do not report for more than 4 years in a row or show patterns that differ significantly from the National Prisoner Statistics state-level data. I ultimately use 18 states: Alabama, California, Colorado, Georgia, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, North Carolina, North Dakota, Nebraska, Nevada, New York, Tennessee, Texas, and Utah.

Figures 5 and 6 show that the southeastern states in the sample, along with California, had steep increases in female imprisonment rates. While North Carolina already had high admissions in 1990, Texas, Kentucky, and Missouri experienced particularly strong changes between 1990 and 2010. In the northern states, it seems that

increases often happened in counties containing Native American Reservations, which I then included as a control in my analysis.

Figure 5. 1990 Female prison admissions per 100,000 population (NCRP)

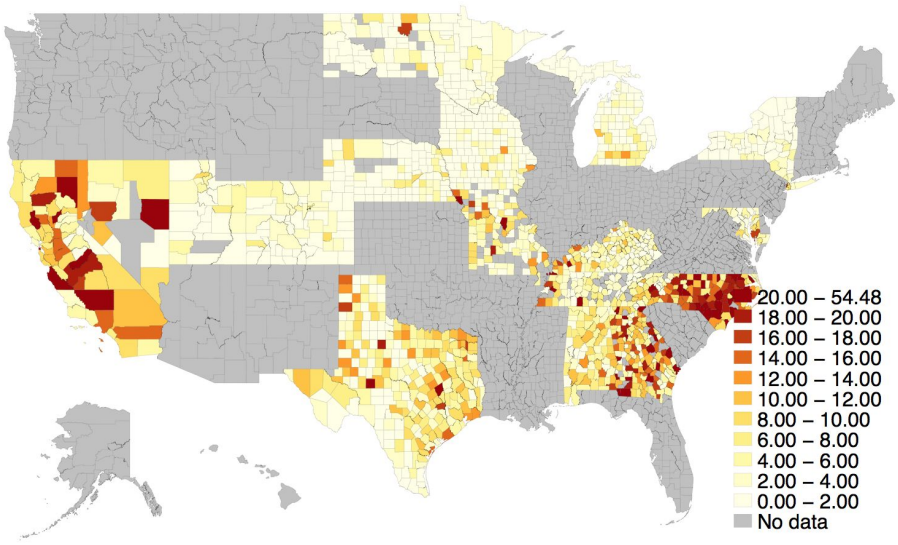
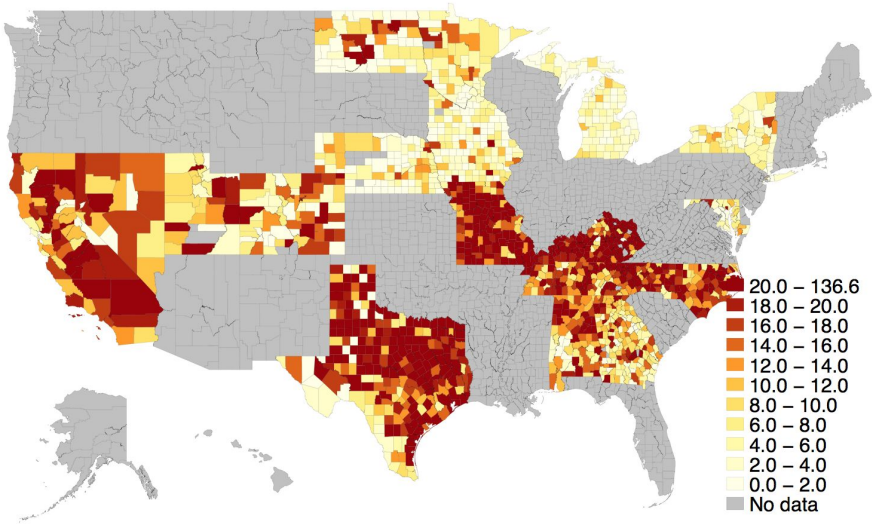


Figure 6. 2010 Female prison admissions per 100,000 population (NCRP)



As shown in Figure 7, while female prisoners make up a much smaller portion of total prisoners than males, the rate of increase has been much higher for females. This is also true for the rate of prison admissions, as female admissions rose 62 percent between 1990-2010, while male admissions grew by only 18 percent. Breaking admissions down by offense in Figures 9 and 10, it is clear that the increase in prison admissions for crimes against property and drug-related offenses among females compared to the relative stability for male admissions in those categories accounts for the bulk of the change.

Figure 7.

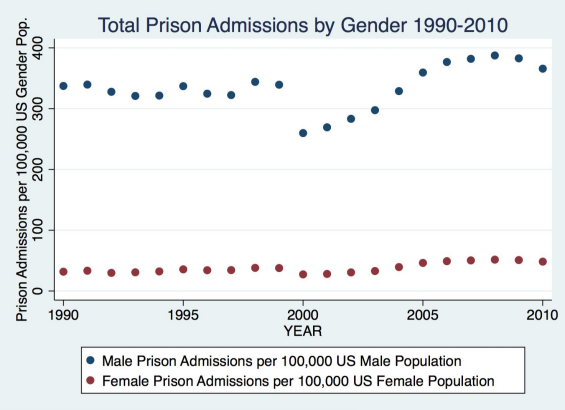


Figure 8.

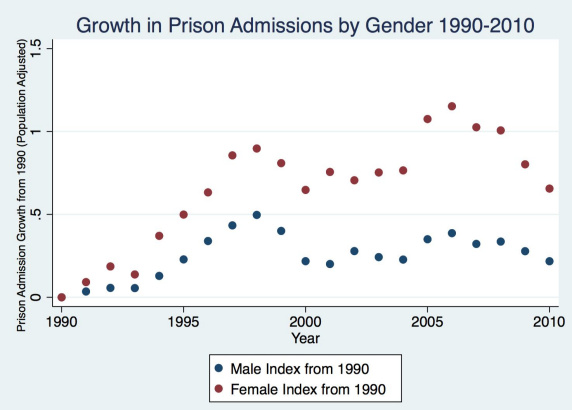


Figure 9.

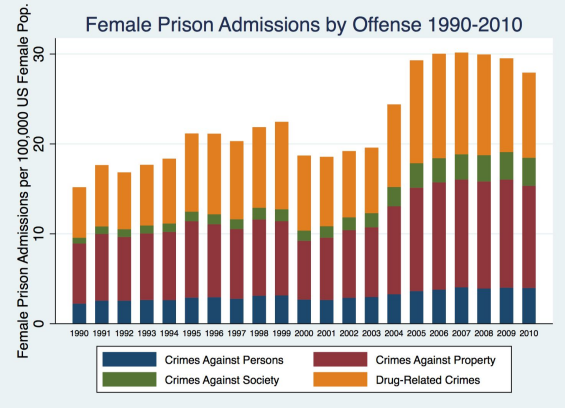
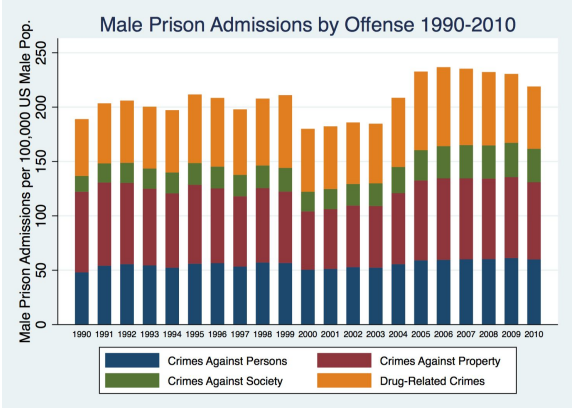


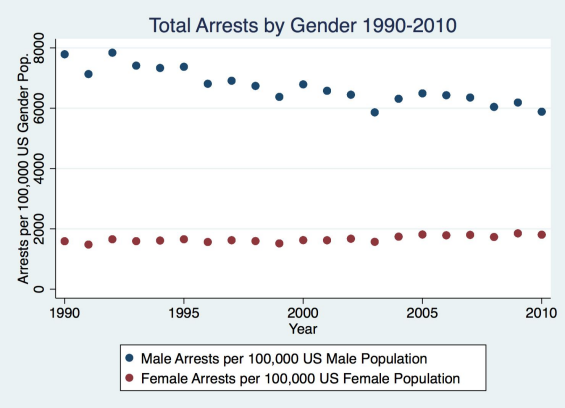
Figure 10.



B. Arrests

The NACJD also provides agency-level data on arrests by age and sex through FBI Uniform Crime Reporting. I used yearly summaries of the monthly-reported data, which show declining arrest rates (-24 percent between 1990-2010) for males and slightly increasing rates (14 percent growth) for females (Figure 12). Similarly to the NCRP data, in Figures 13 and 14, they are adjusted by population and categorized into offense types (crimes against persons, property, and society and drug-related crimes) which are listed in detail in Table 7 of the Appendix.

Figure 11.



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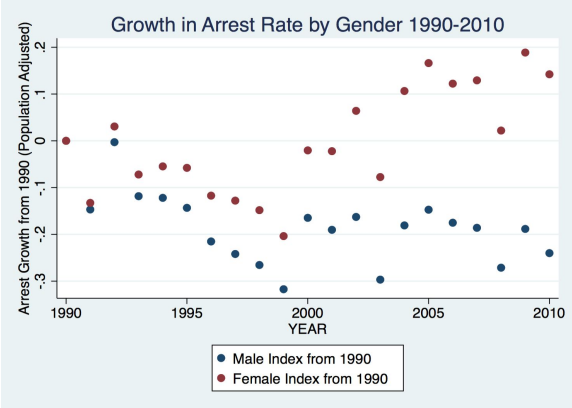


Figure 13.

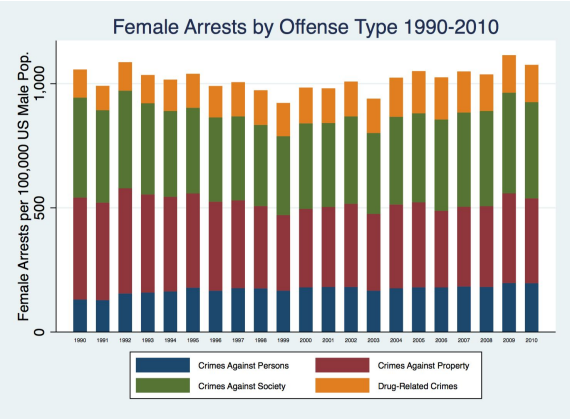
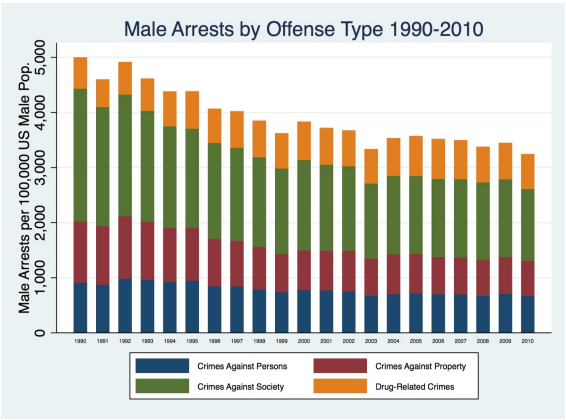


Figure 14.



It appears that crimes against society have been the most significant source of arrest decline for men, while for women, no single offense category seems to have changed dramatically. Figures 17-24 of the Appendix explore the categories in detail and show that increasing arrests for crimes against persons and drug-related offenses for women were driven, respectively, by "other assaults" and possession of illegal drugs rather than sale/manufacture. For men, the decline in arrests for crimes against society was due most notably to decreases in arrests for prostitution/commercialized vice and driving under the influence.

Comparing insights from arrest and prison admissions data, it is clear that arrest rates alone cannot explain the increase in admissions. Female arrests increased by only 14 percent, while prison admissions increased by 62 percent (shown in Table 2). Changes in the process of commitment to prison after arrest are likely significant contributors to overall increases in imprisonment.

Table 2. NCRP Prison Data and UCR Arrest Data

	Population Adjusted Percent Change 1990-2010
Female prison admissions	62%
Male prison admissions	18%
Female arrests	14%
Male arrests	-24%

C. County Factors in Crime

The Integrated Public Use Microdata Series (IPUMS) National Historical Geographic Information System (NHGIS) provides county-level data from the US Decennial Censuses on several factors that were identified as possible contributors to crime in Section II, as well as control variables. The variables included from the NHGIS are female-headed households, education level, income, urban classification, Latin/Hispanic Population, Native American Population, and Black/African American Population. As several variables are only available in 1990, 2000, and 2010, I restrict my analysis to 1990-2010 to avoid extrapolation.

Single motherhood is proxied by the percent of all households that are female-headed with no husband present. Figures 15 and 16 show that increases in this variable were heavily concentrated on the south, somewhat similarly to female prison admissions.

Figure 15. 1990 Percent single female householders (no husband present)

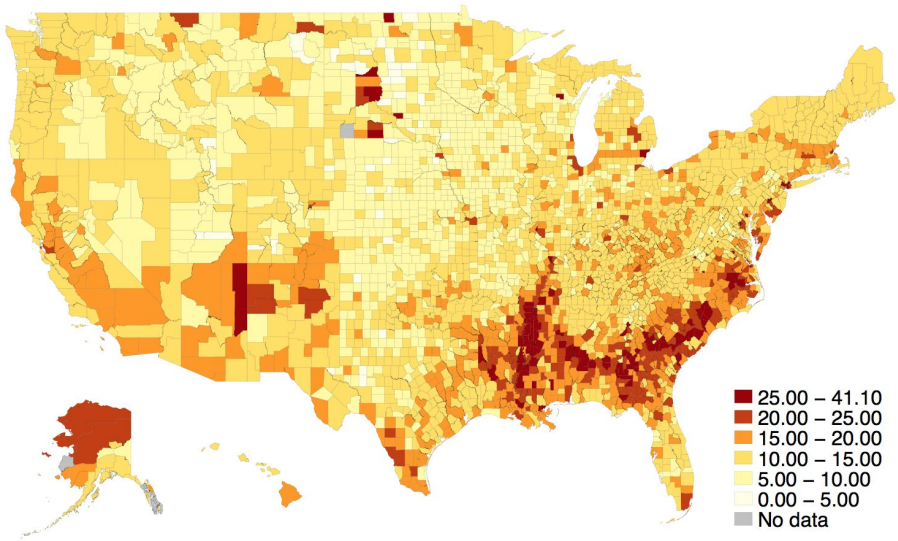
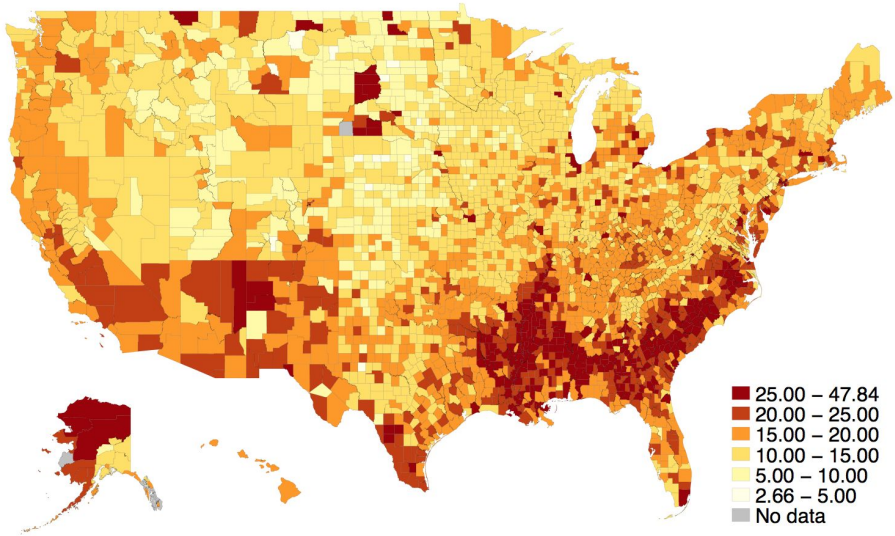


Figure 16. 2010 Percent single female householders (no husband present)



Race and ethnicity controls are converted into dummies, in which a "high" population is one in which the population is greater than the mean plus one standard deviation. The exact cutoffs are listed in Table 8 of the Appendix. Urban classification is measured as a dummy variable which takes a value of 1 when 80 percent or more of a county's population is classified as "urban," as defined by the U.S. Census Bureau, which clusters census blocks which have a population density of at least 1,000 people per square mile and classifies persons in these regions as "urban." Income level is measured as the median household income by county.

Education level is measured by the percent of the population that has completed a bachelor's degree or four years of college. I incorporate findings from Wilcox and Zill (2015) which find that states with high "stability" in families, meaning that parents tend to stay together, is least common in "blue" states with average education levels and "red" states with low education levels. I create dummy variables to proxy the red/low education and blue/medium to low education groups he discusses. "Blue" and "red" are classified using the state legislative control groupings. I include a measure of high, medium, and low levels of education by classifying "high" as above the 80th percentile, "low" as below the 20th percentile, and "medium" as between those parameters. Exact cutoffs are listed in Table 9 of the Appendix.

County unemployment data come from the Local Area Unemployment Statistics (LAUS) program's annually-reported unemployment rates. These data are also unavailable before 1990.

The National Conference of State Legislatures (NCSL) determines state legislative partisan composition as of January each year, which may either be Democrat, Republican, or split, based on the composition of the state's house of representatives and senate.

D. County Factors in Imprisonment

In addition to female-headed households, median income, urban classification, and state legislative composition, I analyze TEDS (Treatment Episode Data Set) admissions data from the Substance Abuse & Mental Health Data Archive (SAMHDA) to examine factors which may explain imprisonment given arrest. The TEDS data are reported at an individual level annually, as required by state laws for publicly-funded admissions. I aggregate admissions by gender to create a dummy variable for counties in which publicly-funded treatment was received. I use a crosswalk to convert the micropolitan and metropolitan areas, which each contain one or more counties, into county FIPS codes. The TEDS data provides a measure of the availability of alternative options for arrestees, in this case substance abuse or mental health treatment.

IV. Methodology

A. Crime/Arrests

Without a dataset for crime by gender, I use arrests to proxy crimes, which assumes that the ratio of arrests to crimes has stayed constant over time. While that is unlikely (as discussed in Section II), I argue that it remains useful though imperfect.

To measure the role played by the determinants of crime/arrest for women over this time period, I run eight county fixed-effects panel regressions, one for each type of offense by gender (violent, property, drug, or other). Fixed-effects modeling allows me to control for all variables at the county level which are constant over time, decreasing the risk of omitted variable bias. In addition to county fixed effects, I use state-time fixed effects in attempt to capture state-level policy changes which may have affected changes in sentencing decisions. To confirm that fixed effects is an appropriate model, I run a Hausman test and find there is strong support for fixed-effects modeling. Using this approach, my empirical model is this:

$$\ln(\text{arrestrate})_{it} = \beta_0 + \beta_1 \text{unemployment}_{it} + \beta_2 \text{education}_{it} + \beta_3 \ln(\text{medianincome})_{it}$$
$$+ \beta_4 \text{singlefemalehouseholder}_{it} + \beta_5 \text{urban}_{it} + \beta_6 \text{republicanlegislation}_{st} + \beta_7 \text{redloweducation}_{it}$$
$$+ \beta_8 \text{bluemededucation}_{it} + \beta_9 \text{black/africanam}_{it} + \beta_{10} \text{latin/hispanic}_{it} + \beta_{11} \text{nativeam}_{it} + \alpha_i + \delta_{st} + \varepsilon_{it} \quad (2)$$

where i represents each county, s is state, t is time measured in years, and where the α_i represents county fixed effects and δ_{st} represents state-year fixed effects. Continuous variables which are not already in percentage form (arrest rate and median income) I log using the natural log for ease of interpretation.

B. Prison Admissions

Due to the limits of my data, I cannot perform a complete decomposition analysis as outlined in Section II. Instead, I use this concept to isolate the process between arrest and prison admission. The decomposition method follows the logic that of the total population, a certain fraction engage in criminal activity. Of that group, a fraction are arrested, and finally, a fraction of the arrested group are admitted to prison. Controlling for arrest rates in my empirical model allows for interpretation of factors which affect imprisonment given arrest. Since the literature has identified a leveling off or decrease of crime over the study time period, the increases in arrests can be assumed to have significantly increased prison admissions when controlling for crime.

Using county-level controls, arrest rates, and SAMDHA data on treatment facility availability, I run county and state-time fixed effects panel regressions for each gender/offense type combination using the following empirical model:

$$\ln(\text{prisonadmitrate})_{it} = \beta_0 + \beta_1 \ln(\text{arrestrate})_{it} + \beta_2 \ln(\text{medianincome})_{it} + \beta_3 \text{singlefemalehouseholder}_{it} + \beta_4 \text{urban}_{it} + \beta_5 \text{treatmentfacility}_{it} + \beta_6 \text{republicanlegislation}_{st} + \beta_7 \text{redloweducation}_{it} + \beta_8 \text{bluemededucation}_{it} + \beta_9 \text{black/africanam}_{it} + \beta_{10} \text{latin/hispanic}_{it} + \beta_{11} \text{nativeam}_{it} + \alpha_i + \delta_{st} + \varepsilon_{it} \quad (3)$$

where i represents each county, s is state, t is time measured in years, and where the α_i represents county fixed effects and δ_{st} represents state-year fixed effects. Continuous variables which are not already in percentage form (admit rate, arrest rate, and median income) I log using the natural log for ease of interpretation.

V. Results

The first specification uses county and state-year fixed effects to explore the relationship between arrests and county- and state-level factors and controls, following equation (2) from Section IV.

Table 3: Logged Female Arrest Rate by Offense Type

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Unemployment Rate	-0.00766***	-0.00837***	0.00247	-0.00289
	(0.00254)	(0.00276)	(0.00228)	(0.00289)
Percent College Grads	-0.00715**	-0.0118***	-0.00685**	-0.0189***
	(0.00357)	(0.00390)	(0.00320)	(0.00407)
Logged Median Income	0.171**	0.185**	0.0444	-0.0462
	(0.0856)	(0.0930)	(0.0756)	(0.0980)
Percent Single Female Householders	0.0278***	0.0122**	-0.00232	0.00252
	(0.00548)	(0.00602)	(0.00485)	(0.00631)
Urban	0.0637**	0.0188	0.0464*	0.0269
	(0.0297)	(0.0328)	(0.0278)	(0.0328)
Republican Legislative Control	-0.212***	-0.105	-0.192***	-0.133
	(0.0759)	(0.0842)	(0.0714)	(0.0843)
Low Education Red State	-0.00817	-0.0306*	0.0318**	-0.0325**
	(0.0142)	(0.0157)	(0.0130)	(0.0160)
Medium/Low Education Blue State	0.146	-0.102	-0.143	0.522***
	(0.103)	(0.112)	(0.0953)	(0.113)
High Black/African American Population	-0.176***	-0.0499	-0.0639*	-0.119***
	(0.0405)	(0.0447)	(0.0377)	(0.0452)
High Latin/Hispanic Population	-0.0705**	-0.0866***	-0.0769***	-0.0850***
	(0.0285)	(0.0315)	(0.0263)	(0.0318)
High Native American Population	0.0660	0.152*	0.0640	0.154*
	(0.0731)	(0.0808)	(0.0642)	(0.0839)
Observations	49,183	50,456	52,462	47,258
R-squared	0.240	0.130	0.135	0.308
Number of Counties	3,046	3,052	3,078	3,028
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared:				
Overall	0.154	0.0804	0.0261	0.0637
Between	0.0343	0.00706	0.00185	0.00800
Within	0.240	0.130	0.135	0.308
F test	15.32	7.433	8.083	20.60
F test for ui = 0	11.84	16.29	16.76	10.39
Rho	0.621	0.649	0.656	0.660

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Logged Male Arrest Rate by Offense Type

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Unemployment Rate	-0.00151	-0.00214	0.0106***	0.00435
	(0.00228)	(0.00240)	(0.00216)	(0.00268)
Percent College Grads	-0.00241	0.00516	0.00946***	-0.00142
	(0.00319)	(0.00335)	(0.00298)	(0.00375)
Logged Median Income	0.278***	-0.249***	-0.193***	0.126
	(0.0757)	(0.0795)	(0.0705)	(0.0892)
Percent Single Female Householders	0.0227***	0.0150***	0.00172	0.0281***
	(0.00487)	(0.00512)	(0.00451)	(0.00573)
Urban	0.0378	0.0204	0.0236	0.0236
	(0.0281)	(0.0295)	(0.0267)	(0.0322)
Republican Legislative Control	0.0435	-0.0783	0.0693	-0.0361
	(0.0723)	(0.0757)	(0.0684)	(0.0823)
Low Education Red State	-0.0291**	-0.0261*	0.0127	-0.0243
	(0.0131)	(0.0137)	(0.0123)	(0.0152)
Medium/Low Education Blue State	-0.203**	-0.194*	-0.289***	-0.242**
	(0.0966)	(0.101)	(0.0918)	(0.110)
High Black/African American Population	-0.114***	-0.0282	-0.0258	-0.0610
	(0.0381)	(0.0398)	(0.0361)	(0.0437)
High Latin/Hispanic Population	-0.0514*	-0.0622**	-0.0294	-0.0428
	(0.0266)	(0.0278)	(0.0252)	(0.0306)
High Native American Population	0.0263	0.167**	0.0458	0.170**
	(0.0652)	(0.0686)	(0.0614)	(0.0765)
Observations	52,953	52,806	53,861	51,786
R-squared	0.148	0.154	0.214	0.224
Number of Counties	3,084	3,079	3,085	3,072
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared:				
Overall	0.134	0.0813	0.106	0.148
Between	0.0621	0.0109	0.0309	0.0839
Within	0.148	0.154	0.214	0.224
F test	9.123	9.537	14.50	14.80
F test for ui = 0	14.09	15.29	17.51	13.51
Rho	0.627	0.636	0.643	0.599

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

There is little evidence of substitution toward illegal work when there is less legal work available (higher unemployment) from this specification. For females, a 1% increase in unemployment was associated with a 0.0837% decrease in property crime arrests (which tend to be income-generating activities such as theft, fraud, embezzlement, etc.). Comparing this to male arrests, only arrests for crimes against society were significantly

related to unemployment, but the relationship is positive. So while males may experience the substitution between illegal and legal work depending on availability of work, females may experience overall unemployment in a different way. If it is their husbands or support system who experience unemployment, females may spend even more time caring for them and the family, engaging in more non-market work, leaving less time for illegal activities. Increased unemployment may actually give women more responsibilities, if they are given the bulk of non-market work (such as household and caretaker activities). However, other research has not explored this theory and these results may be unique to this analysis and specification.

Increased education is related to decreased arrests for females, as expected given previous research and theory. A 1% increase in the percent of college graduates in a county is associated with a 0.0189% decrease in arrests for drug-related crimes when controlling for the other variables. For males, on the other hand, education is not significantly related to arrests other than crimes against society, which is positively related. Crimes against society are largely made up of alcohol-related offenses (DUI's, drunkenness, etc.), so these type offenses may be more popular among men in increasingly educated counties.

A 1% increase in median income of a county is associated with a 0.171% increase in arrests for crimes against persons (generally violent crimes) and a 0.185% increase in arrests for property crimes. While this does not follow theory around choosing to commit a crime due to lower income, it may be explained by the police activity in a county rather than the crimes committed. As a county becomes wealthier, it likely invests more in its

police force and may prioritize eliminating crime by having a more active police force that arrests more often.

Higher percentages of single female householders (with no husband present) in counties is associated with higher arrests in counties, for both genders. For females, a 1% increase in single female householders in a county is associated with a 0.0278% increase in arrests for crimes against persons (generally violent) and a 0.0122% increase in arrests for property crimes. This follows theory around women who have less time and/or are the income-generators of their families turning to illegal income-generating activity. Arrests for males are also positively related to higher proportions of single female householders, perhaps because fewer of them are participating in joint-householder partnerships that would discourage criminal activity.

Urban counties are also related to increased female arrests, where qualifying as urban is associated with a 0.0637% increase in females arrests for crimes against persons. This was expected, as urban areas tend to have higher crime rates.

State legislative control indicates the party affiliation of policy-makers of a state, who may influence and change the way policing and criminal punishment are conducted. Though Republicans are thought of as being "tough on crime," this variable is associated with a decrease in female arrests for crimes against persons and society, and not significantly related to male arrests. Perhaps police in Republican states do not pursue women as intensely.

The phenomenon within red states with low education and blue states with medium to low education seems less consistent for female arrests than male arrests. The

negative relationship with male arrests, which frequently outweighs the single female householder relationship, indicates that when controlling for some of the values proxied by these red state/blue state/education variables, the effect of single female householders still remains positive for male arrests.

Finally, where significant, counties with high Black/African American or Latin/Hispanic populations have lower arrests, and higher Native American populations are associated with higher arrests.

After considering factors in changing arrest rates for females and males, I present the next set of results in which imprisonment is modeled by arrest rate, median income, single female householders, urban classification, race/ethnic group, Republican state legislation, red state with low education and blue state with medium to low education, single female householders, arrest rate, and the use of a publicly-funded treatment facility using county and state-year fixed effects.

Table 5: Logged Female Prison Admissions Rate by Offense Type

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Logged Female Arrest Rate	0.0290***	0.0397***	0.0215*	0.0785***
	(0.00836)	(0.00700)	(0.0117)	(0.00797)
Logged Median Income	-0.687***	-0.468***	-2.105***	-0.636***
	(0.168)	(0.143)	(0.220)	(0.171)
Percent Single Female Householders	0.0801***	0.00690	-0.00459	0.0159
	(0.00942)	(0.00866)	(0.0122)	(0.0102)
Urban	0.0463	0.0742*	-0.110**	-0.00914
	(0.0443)	(0.0431)	(0.0557)	(0.0477)
High Black/African American Population	0.214***	0.00883	-0.0109	0.214***
	(0.0554)	(0.0545)	(0.0720)	(0.0610)
High Latin/Hispanic Population	0.0117	-0.0152	-0.0551	-0.0887**
	(0.0394)	(0.0382)	(0.0487)	(0.0421)
High Native American Population	0.151	0.348*	0.00520	-0.0131
	(0.182)	(0.185)	(0.210)	(0.210)
Republican Legislative Control	-0.0101	0.0365	0.261**	0.124
	(0.0929)	(0.0871)	(0.126)	(0.0922)
Low Education Red State	-0.0329	-0.0538**	0.0833**	-0.0428
	(0.0256)	(0.0235)	(0.0334)	(0.0274)
Medium/Low Education Blue State	0.0463	0.0275	0.583***	-0.530***
	(0.114)	(0.109)	(0.139)	(0.132)
Female Treatment Facility	-0.0169	-0.0306	0.0415	-0.0151
	(0.0281)	(0.0281)	(0.0352)	(0.0315)
Observations	12,489	17,184	9,585	15,075
R-squared	0.161	0.299	0.260	0.347
Number of Counties	1,389	1,514	1,277	1,468
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared:				
Overall	0.0942	0.137	0.197	0.119
Between	0.0216	0.0281	0.0786	0.0583
Within	0.161	0.299	0.260	0.347
F test	5.326	17.02	7.430	18.35
F test for ui = 0	8.160	8.638	7.990	8.719
Rho	0.785	0.655	0.800	0.697

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Logged Male Prison Admissions Rate by Offense Type

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Logged Male Arrest Rate	0.0255***	0.0282***	0.0337***	0.0757***
	(0.00540)	(0.00505)	(0.00718)	(0.00621)
Logged Median Income	-0.124	0.00297	-0.667***	-0.139
	(0.0890)	(0.0877)	(0.111)	(0.120)
Percent Single Female Householders	0.0375***	0.0335***	0.0370***	0.0218***
	(0.00569)	(0.00562)	(0.00718)	(0.00758)
Urban	0.0214	-0.000383	-0.0725*	0.0503
	(0.0336)	(0.0337)	(0.0396)	(0.0419)
High Black/African American Population	0.0641	0.0329	0.0101	0.124**
	(0.0424)	(0.0421)	(0.0494)	(0.0532)
High Latin/Hispanic Population	-0.0648**	-0.0531*	-0.0111	-0.0413
	(0.0277)	(0.0276)	(0.0331)	(0.0352)
High Native American Population	0.0675	0.0618	0.0202	0.0122
	(0.108)	(0.106)	(0.139)	(0.197)
Republican Legislative Control	0.0996	0.0491	0.0609	0.179**
	(0.0706)	(0.0700)	(0.0894)	(0.0865)
Low Education Red State	-0.0543***	-0.0632***	-0.0512***	-0.0512**
	(0.0159)	(0.0159)	(0.0196)	(0.0207)
Medium/Low Education Blue State	-0.0176	0.0570	0.216**	-0.0479
	(0.0886)	(0.0883)	(0.102)	(0.109)
Male Treatment Facility	0.0182	0.000332	0.00162	0.0173
	(0.0166)	(0.0165)	(0.0196)	(0.0209)
Observations	25,745	25,964	22,614	23,162
R-squared	0.200	0.437	0.374	0.431
Number of Counties	1,644	1,650	1,629	1,619
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared				
Overall	0.226	0.276	0.0983	0.226
Between	0.209	0.113	0.0151	0.0782
Within	0.200	0.437	0.374	0.431
F test	15.40	48.25	31.93	41.63
F test for ui = 0	9.294	11.09	12.30	11.37
Rho	0.562	0.629	0.763	0.643

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Female arrest rates were associated positively with female prison admissions for each respective offense type. Arrests for female drug-related offenses had the largest coefficient, with a 1% increase in arrests associated with a 0.0785% increase in prison admissions when controlling for the other variables. If all arrests turned into prison admissions, this number would be much closer to 1.

Higher median income was associated with lower female prison admissions for all offense types, indicating that counties with less affluent populations admit higher amounts of arrested females to prison. This may have to do with the resources a county has to deal with arrestees, where counties with fewer resources send offenders to prison because they don't have available alternatives.

For both males and females, higher percentages of single female householders is associated with higher prison admissions where significant. Counties with higher single female householders may be less forgiving to offenders. Recalling the maps of female imprisonment rates and single female householders, both variables were high in the southeastern region–states such as Alabama, North Carolina, Texas, Missouri, and Kentucky.

Counties with high Black/African American populations have higher prison admissions for female offenders of violent (against persons) and drug-related crimes. Republican legislation appears "tough on crime" for prison admissions of female crimes against society, but is not significantly related to female prison admissions of other types. However, using just the Neal and Rick approved states (Appendix Tables 10 and 11),

female prison admissions are higher for all other offense types under Republican state legislation.

The red state with low education and blue state with medium to low education variables work in the same direction for female prison admissions categories. When these variables are true, they are associated with higher prison admissions for female crimes against society. Red state with low education counties are associated with lower female prison admissions for property crimes, and blue state with medium to low education counties are associated with lower female prison admissions for drug-related offense types. Red states with low education are associated with lower male prison admissions for all offense types, suggesting that these counties may be more forgiving or have less inclination to send offenders to prison. This negative result contradicts the positive single female householder effect.

Finally, treatment facilities do not appear significantly related to any prison admission types, indicating that this use/availability of treatment is not a significant factor in the decision to admit offenders to prison. Using just the Neal and Rick approved states (Appendix Tables 10 and 11), there is some mildly significant evidence that male drug-related prison admissions may be lower where a treatment facility is available.

Conclusion

Limitations in my data don't allow for as comprehensive of analysis as is desired. As studied by previous researchers, the rates of female imprisonment and contributors to that end vary widely by race and can be better understood when separated accordingly. While the county level of detail gives more insight into variance in imprisonment, the inaccuracies in data reporting pose challenges to meaningful results.

Analyses of other alternatives to imprisonment may provide further insights on the changes in the ratio of arrests to imprisonment over the time period and are worth investigating, as well as judge- and county- specific factors that impact sentencing decisions. The addition of a sentence length variable in this analysis could lend important insights into the deterrence effect of severe sentencing as well as a look at stocks versus flows in prisons, which examines entrance, exit, and population in prison, whereas this analysis was restricted to admissions.

One avenue for future research may be to separate detailed crimes into income-generating vs. consumption or other offense types in order to interpret crime as rational choice more intuitively. In using the FBI guide of separating offense types, the interpretation of the arrest regressions was not as clear using rational choice theory.

While increases in female prison admissions can be partially explained by increases in female arrests, policy changes and alternatives to prison may be significant factors in explaining the increase in the female prison admission rate over the arrest rate. My analysis finds that county socioeconomic and demographic characteristics are significant factors in explaining rises in female imprisonment, including the effect of single female householdership on prison admissions.

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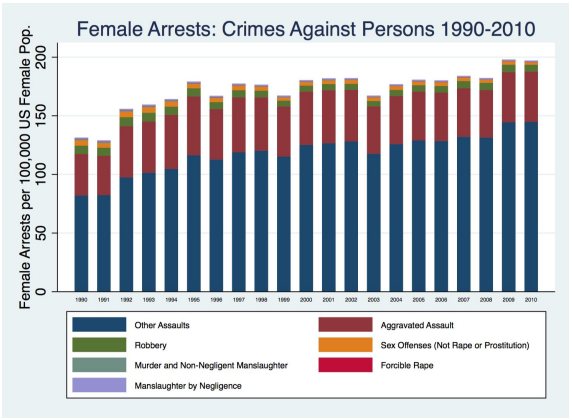
Appendix

Table 7. Classification of offense data

Offense Type	NCRP code	UCR code
Crimes against persons	• 010, 011, 012, 013 (murder) • 015, 020, 021, 022, 030, 031, 032 (manslaughter) • 040, 041, 042 (kidnapping) • 050, 051, 052, 060, 061, 062, 070, 071, 072, 080, 081, 082, 110, 111, 112 (rape and sexual assault) • 090, 091, 092, 095, 100, 101, 102 (robbery) • 120, 121, 122, 130, 131, 132, 140, 141, 142 (assault) • 160, 161, 162 (hit and run driving) • 170, 171, 172 (child abuse) • 180 (other such as abortion, aiding suicide, etc.) • 630 (invasion of privacy)	• 011 (murder and non-negligent manslaughter) • 020 (forcible rape) • 030 (robbery) • 040 (aggravated assault) • 080 (other assaults) • 012 (manslaughter by negligence) • 170 (sex offenses-not rape or prostitution)
Crimes against property	• 150, 151, 152 (blackmail/intimidation) • 190, 191, 192 (burglary) • 200, 201, 202 (arson) • 210, 211, 212 (auto theft) • 220, 221, 222, 810, 820, 830 (forgery and fraud) • 230, 231, 232, 240, 241, 242, 250, 251, 252 (larceny-theft) • 260, 261, 262, 800 (embezzlement) • 270, 271, 272, 280, 281, 282 (stolen property) • 290, 291, 292 (destruction of property) • 300 (hit and run property damage) • 310, 311, 312 (unauthorized use vehicle) • 320, 321, 322 (trespassing) • 330, 331, 332, 333, 334, 335 (other property offenses) • 673, 674, 675 (bribery) • 860 (extortion/racketeering)	• 050 (burglary-breaking or entering) • 060 (larceny-theft) • 070 (motor vehicle theft) • 090 (arson) • 100 (forgery and counterfeiting) • 140 (vandalism) • 110 (fraud) • 120 (embezzlement) • 130 (stolen property-buy, receive, possess)

Offense Type	NCRP code	UCR code
Crimes against society	• 460, 461, 462, 471, 472 (escape or flight) • 480, 481, 482 (weapon) • 510, 511, 512 (rioting) • 550 (traffic offenses) • 560, 565, 570 (dwi, dui) • 580 (family) • 590 (drunk/vagrancy/disorderly) • 600, 601, 602 (morals/decency) • 620, 621, 622 (obstruction) • 640 (commercialized vice) • 660 (liquor law) • 670, 671, 672 (public order offense) • 840, 850 (regulatory, tax)	• 150 (weapons-carry, possess, etc.) • 160 (prostitution and commercialized vice) • 190 (gambling-total) • 200 (offenses against family and children) • 210 (driving under the influence) • 220 (liquor laws) • 230 (drunkenness) • 240 (disorderly conduct) • 250 (vagrancy) • 280 (curfew and loitering violations)
Drug-related crimes	• 340, 341, 342 (trafficking heroin) • 350, 351, 352 (trafficking other controlled substance) • 360, 361, 362 (trafficking marijuana) • 370, 371, 372 (trafficking drug unspecified) • 380, 381, 382, 390, 391, 392, 400, 401, 402, 410, (possession/use) • 420, 430, 440, 450 (other drug offense)	• 18 (total drug abuse violations)
Not included in an offense type category	• 490 (parole violation) • 500 (probation violation) • 520 (habitual offender) • 530 (contempt of court) • 540, 541, 542 (offenses against courts, legislatures, and commissions) • 610 (immigration) • 690 (felony) • 700 (misdemeanor) • 710, 990 (other/not known) • 650 (contributing to delinquency of minor) • 680 (juvenile offenses)	• 260 (all other offenses) • 270 (suspicion) • 290 (runaways)

Figure 17.



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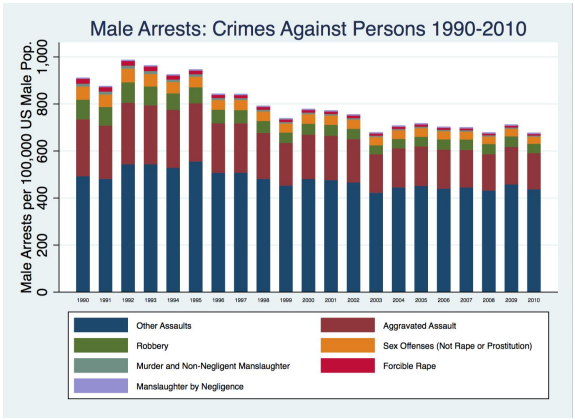

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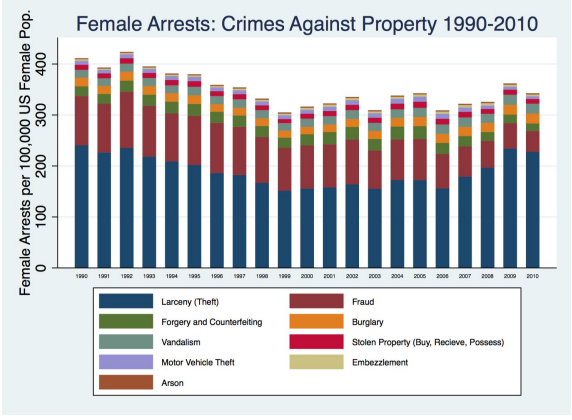

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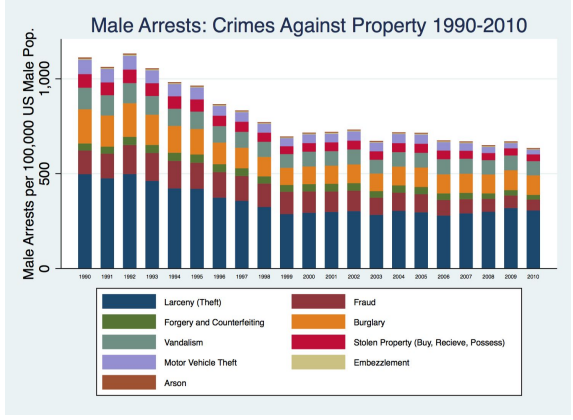

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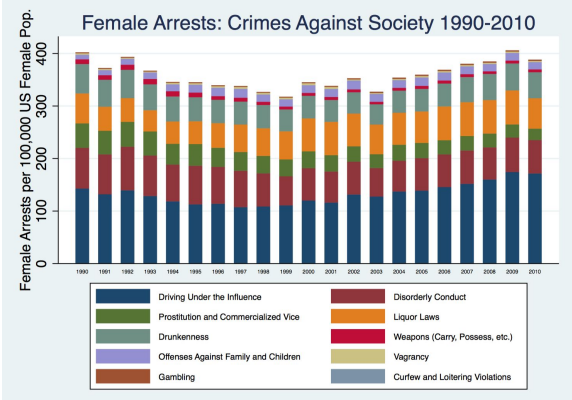

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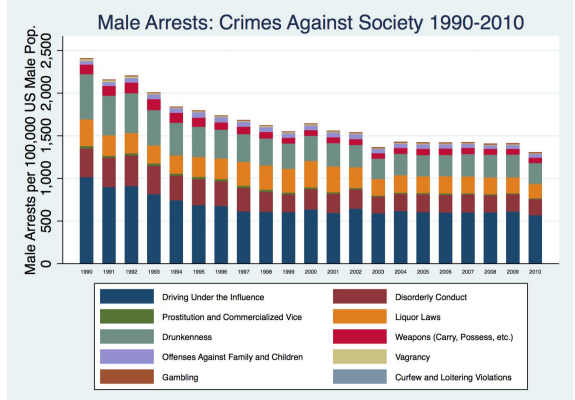

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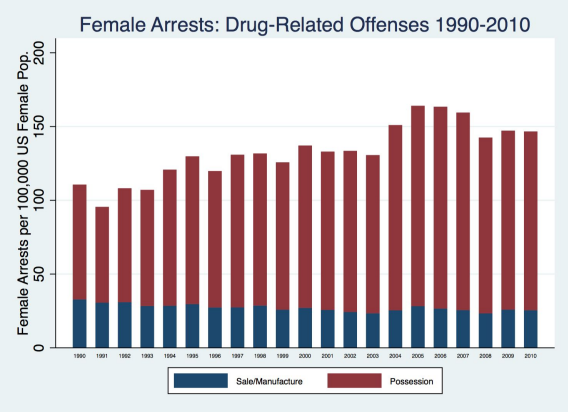

Figure 24.

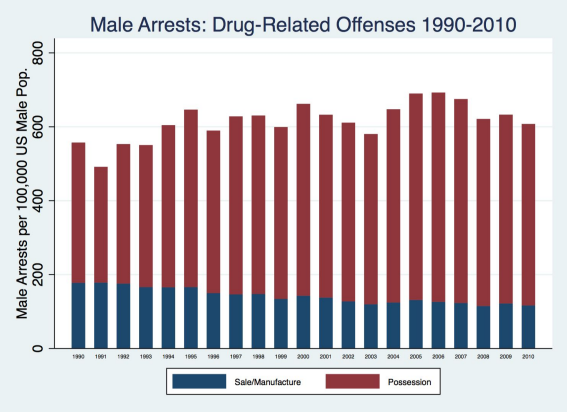

Table 8. High race/ethnicity population qualification

Race/ethnicity	High if (mean plus one standard deviation)
Black/African American	>= 23.3%
Latin/Hispanic	>= 18.5%
Native American	>= 8.1%

Table 9. Education cutoffs

Education Level	Cutoff	Exact Cutoff
Low	Below 20th percentile	< 0.0693958
Medium	20th-80th percentile	0.0693958-0.1447214
High	Above 80th percentile	> 0.1447214

Table 10: Logged Female Prison Admissions Rate by Offense Type (Neal and Rick Approved States)

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Logged Female Arrest Rate	-0.00169	0.0513**	-0.0148	0.150***
	(0.0302)	(0.0220)	(0.0403)	(0.0265)
Logged Median Income	0.158	1.307***	-1.735***	1.548***
	(0.429)	(0.360)	(0.572)	(0.445)
Percent Single Female Householders	0.216***	0.110***	0.0524	0.118***
	(0.0263)	(0.0230)	(0.0327)	(0.0281)
Urban	0.144**	-0.0414	0.0246	-0.0245
	(0.0696)	(0.0675)	(0.0877)	(0.0745)
High Latin/Hispanic Population	0.115*	-0.0763	-0.248***	-0.222***
	(0.0633)	(0.0604)	(0.0788)	(0.0683)
Republican Legislative Control	0.244**	0.258***	0.0221	0.333**
	(0.118)	(0.0998)	(0.148)	(0.134)
Low Education Red State	-0.00762	0.0127	-0.0621	0.107
	(0.0579)	(0.0488)	(0.0716)	(0.0661)
Medium/Low Education Blue State	0.0346	0.0557	0.613***	0.142
	(0.191)	(0.147)	(0.230)	(0.186)
Female Treatment Facility	0.0628	0.0116	0.102	0.0510
	(0.0668)	(0.0664)	(0.0834)	(0.0749)
Observations	2,055	2,623	1,820	2,188
R-squared	0.214	0.202	0.247	0.259
Number of Counties	184	193	168	181
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared:				
Overall	0.00756	0.0477	0.0239	0.0398
Between	0.0679	0.188	0.00126	0.117
Within	0.214	0.202	0.247	0.259
F test	7.340	8.921	7.762	10.09
F test for ui=0	14.45	15.97	12.33	15.21
Rho	0.903	0.845	0.860	0.848

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: High Black Population and High Native American Population variables omitted due to multicollinearity

Table 11: Logged Male Prison Admissions Rate by Offense Type (Neal and Rick Approved States)

VARIABLES	(1) Crimes Against Persons	(2) Crimes Against Property	(3) Crimes Against Society	(4) Drug-Related Crimes
Logged Male Arrest Rate	-0.0113	0.0405***	0.0218	0.124***
	(0.0175)	(0.0155)	(0.0214)	(0.0189)
Logged Median Income	-0.104	1.090***	-0.535*	1.172***
	(0.219)	(0.218)	(0.276)	(0.300)
Percent Single Female Householders	0.0423***	0.0739***	0.0700***	0.100***
	(0.0145)	(0.0146)	(0.0193)	(0.0198)
Urban	0.0469	0.0345	-0.00173	0.00173
	(0.0576)	(0.0584)	(0.0682)	(0.0692)
High Latin/Hispanic Population	-0.105**	-0.0181	-0.0948	0.0232
	(0.0475)	(0.0487)	(0.0578)	(0.0582)
High Native American Population	1.138***	1.000***	0.575*	
	(0.295)	(0.254)	(0.349)	
Republican Legislative Control	-0.106	0.295***	0.164**	0.0750
	(0.0675)	(0.0676)	(0.0821)	(0.0891)
Low Education Red State	0.0363	-0.0173	-0.0822**	0.122***
	(0.0314)	(0.0316)	(0.0387)	(0.0427)
Medium/Low Education Blue State	-0.00927	0.0293	0.231*	-0.202
	(0.103)	(0.103)	(0.126)	(0.132)
Male Treatment Facility	0.0300	-0.0662	-0.0297	-0.0901*
	(0.0425)	(0.0429)	(0.0499)	(0.0514)
Observations	3,858	3,912	3,509	3,329
R-squared	0.144	0.174	0.265	0.255
Number of Counties	203	203	202	198
County-Year FE	YES	YES	YES	YES
State-Year FE	YES	YES	YES	YES
R-squared:				
Overall	0.387	0.00282	0.326	0.0827
Between	0.385	0.00257	0.243	0.0447
Within	0.144	0.174	0.265	0.255
F test	8.855	11.31	17.16	15.63
F test for ui=0	13.99	18.09	18.40	18.22
Rho	0.652	0.789	0.649	0.818

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: High Black Population variable omitted due to multicollinearity